OBSERVATIONS AND CRITICAL NOTES ON INDIAN *DRYMARIA* WILLD.

Edgeworth & Hooker (1874) recorded only *D. cordata* in the genus *Drymaria* in India while Duke (1961) identified the same taxon as *D. cordata* ssp. *diandra* (Blume) Duke. Mizushima (1963) recorded the existence of *D. villosa* Cham. & Schlecht. in Darjeeling, Eastern Himalaya. Majumdar (1968) also reported the occurrence of this species from South India.

While identifying a gathering of *Drymaria* collected from Celjang (altit. 1,250 m), Manipur, December, 1973, *Malick* 1450, some differences *viz.* glaucous, yellowish-green leaves and slender habit were noticed in the living as well as in dry condition. Similar specimens were also collected from Darjeeling (altit. 1850 m), December, January, 1973-74, *M. K. Ghosh* 608.

This led to the thorough study of the specimens of *Drymaria* in Herb. CAL and BSIS*. Along with these, two other specimens *viz.* West Indies, *Curtiss* 288 and Bolivia, *Bang* 233, identified as *D. cordata* ssp. *cordata* by Duke (1961) were also examined. Specimens collected from Manipur and Darjeeling showed greater resemblances with the specimens of *Curtiss* and *Bang*.

As a result of this study, it appeared that the characters given by Duke delimiting the two subspecies *viz.* breadth of flower above or below the middle, inflexion of sepals and breadth of the seed are not very constant. Many intermediate forms with overlapping characters were found in between the two extreme conditions in the subspecific rank. In *D. cordata*, the capsules bear 1-many seeds. Though Duke (1961) described ssp. *diandra* as having 1-2 seeds, the authors came across capsules with 3 seeds in number of cases along with 1-2-seeded condition. This is remarkable as the number of seed is considered to be an important character delimiting the two subspecies. This also justifies merging of the two subspecies.

D. villosa "Mexico, *Pringle* 1196" cited by Duke has been examined and the nature of villousness and auricle of petals have also been observed. The characters by which *D. villosa* has been distinguished *viz.* villous leaves and vegetative parts, elliptic acute or obtuse sepals and auriculate petals in Indian *villosa* are not such well-defined characters to differentiate *villosa* from *cordata*. Further, Duke described the petals as exauriculate in the series "Cordatae" except "... poorly developed auricles occasionally present in *D. gracilis*". Petals have ciliate auricles in *D. villosa* and other species of the series "Villosae". But poorly developed to well-developed even bifurcated auricles on one side or both sides of some petals in some flowers have been found to occur in the materials collected from Manipur and Darjeeling. The presence of auriculate nature of petals breaks the distinction between the two species. The oblong anthers so characteristic of *D. villosa* are also found in some materials of *D. cordata* which also supports the merging of the two species. At the same time the very maintenance of the series "Villosae" of Duke becomes doubtful. Hence the authors propose the nomenclature and synonymy of the Indian materials of *Drymaria* as follows:

Drymaria cordata (L.) Willd. ex Roem. & Schult. Syst. Veg. 5: 406. 1819; Edgew. & Hook. f. in Hook. f. Fl. Brit. Ind. 1: 244. 1874. *Holosteum cordatum* L. Sp. Pl. 88. 1753. *Drymaria diandra* Blume Bijdr. Fl. Nederl. Ind. 62. 1825. *D. cordata* subsp. *diandra* (Blume) J. Duke in Ann. Missouri Bot. Gdn. 48: 253. 1961; Mizushima in J. Jap. Bot. 38(5): 149-154. 1963. *D. villosa* subsp. *villosa* sensu Mizushima l.c., Majumdar Ind. For. 94(8): 645. 1968.

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Following are the ranges of characters of the taxon hitherto known as *D. cordata*:

Glabrous to villous, internodes sometimes very slender; leaves glabrous, glaucous, glandular or villous. Flowers campanulate or pyriform, sepals spreading or incurved, ovate-lanceolate to narrowly obovate, glabrous to glandular-papillate; obscurely to strongly 3-nerved, midrib sometimes extended upto the apex, apex acute or subacute; petals bilobed upto below the middle, lobes broadly lanceolate, oblong or linear, exauriculate or auriculate; auricles poorly to well-developed. Anther-lobes suborbicular to oblong. Styles bilobed or trilobed. Seeds 1-many, cochleate, tubercled.

Following variations are also met within the materials studied.

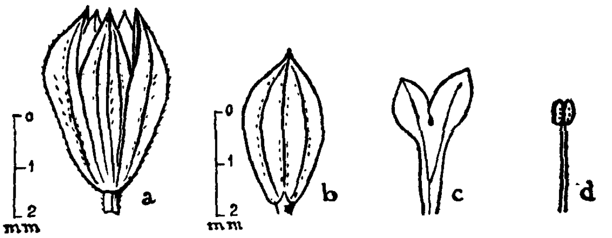

FIG. 1

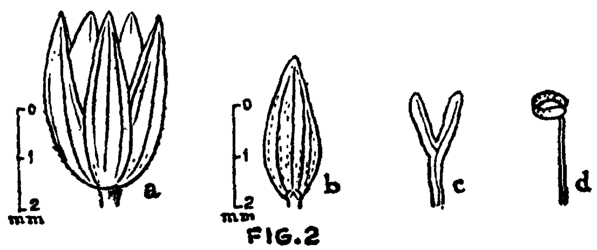

FIG.2

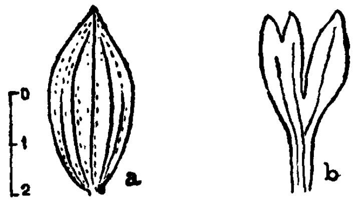

FIG.3

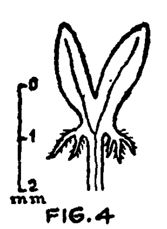

FIG.4

Figs. 1-4 : 1. (subsp. *diandra*)—a. flower. b. sepal. c. petal. d. stamen. 2. (subsp. *cordata*)—a. flower. b. sepal. c. petal. d. stamen. 3. (subsp. *diandra*)—a. sepal. b. petal (trilobed). 4. (*D. villosa* ssp. *villosa*)—petal.

One pair of extra incomplete nerves near the margin, making the total number of nerves 5, were found in one of the five sepals in a material. (Tirap, NEFA, *R. S. Rao* 20087) (Fig. 3a). One of the 5 petals in some flowers of the same specimen show trilobed condition (Fig. 3b).

Sometimes ciliated trifurcated auricles were found (Fg. 4). Variations were also

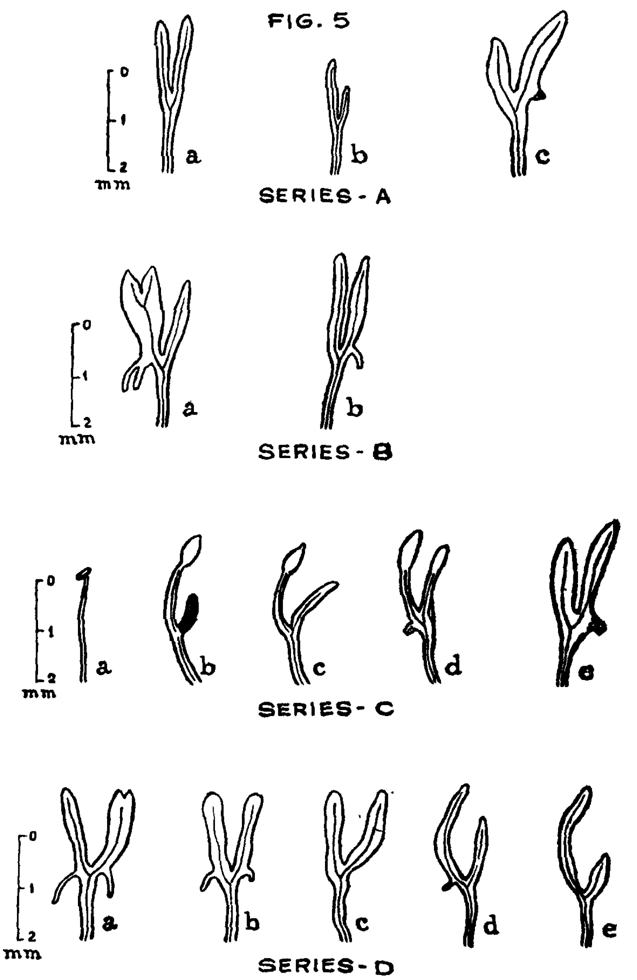
FIG. 5

Fig. 5. (subsp. *cordata*) : Series A : a. normal petal. b. reduced unequal lobed petal. c. petal with poorly developed auricle on one side of unequal lobed petal. Series B : a. petal trilobed ; bifurcated auricle on one side of petal. b. almost developed auricle on one side of petal. Series C : a. stamen with abortive anther; petals. b. one lobe staminal other staminodal. c. one lobe staminodal other normal. d. poorly developed auricle on staminodal lobe. e. unequal lobed with slightly developed auricle on one side. Series D : petals—a. auricle on both sides with slightly bifurcated one lobe. b. auricled both sides. c. unequal lobed exauriculate. d. one lobe reduced with auricle on other. e. one lobe much reduced.

found in the materials assigned to ssp. *cordata* (Fig. 5) *e.g.*

i. Petals of different shape, size and lobes.
ii. One lobe of petal staminal in nature, with tip of the other one staminodal. One lobe of petal staminodal while other one normal. One petal with 3 lobes.
iii. Auriculate petals are examples of most striking variation. Poorly developed to well-developed bifurcated auricle on one side or less frequently on both sides have been observed along with exauriculate petals in the same flower.
iv. One stamen with abortive anther along with other normal anther lobe.

This study goes to show the correctness of the treatment done by Edgeworth & Hooker f. regarding the identity of the Indian *Drymaria* one hundred years ago.

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LYCHNIS STEWARTII EDGEW.—ITS IDENTITY, DESCRIPTION AND DISTRIBUTION

Lychnis stewartii Edgew. (1874) was described on the basis of a collection of Stewart. Bamber (1916) and Blatter (1927) have repeated this description including the "10-cleft capsule".

Lychnis and *Silene* were distinguished by Linnaeus on the basis of style number, but subsequently it has been found that the two have overlapping characters. Further, *Melandryum*, a section of *Lychnis* L. was elevated to a genus. Chowdhuri (1957) has shown that *Lychnis* and *Silene* can be distinguished by capsule characters, and he has merged the genus *Melandrium* Roehl. under *Silene* L. He has further divided the genus *Silene* into 44 sections, and a few subsections. On the basis of characters specified by Chowdhuri (l.c.), *Lychnis stewartii* Edgew. should be treated as belonging to the genus *Silene* L. Accordingly a transfer was done (Majumdar, 1963), but it turns out that the new name given, *Silene chambaensis* is a superfluous name. Although the specific epithet *stewartii* (genitive form) under *Silene* is close to the adjectival form *stewartiana* used by Diels (1912), the two are based on different 'types' and from different localities, the latter being from Yunnan. Transfers and new combinations are governed by article 55 of the ICBN (1972), whereas Article 23A of ICBN (1972) is a recommendation in forming specific epithets, and not transfers. Hence, the proper combination on transfer of the species to *Silene* is now made here.

Chowdhuri (1957) in his key to the 44 Sections of *Silene* L., distinguishes his Section *Suffruticosae* thus: Cymules lax; flowers hermaphrodite; calyx cylindrical-clavate, with more or less prominent nerves; claw smooth and often auriculate. Further, in the enumeration and appropriately validat-